Name _____ Date _____ Pd ____

9.2 Special Right Triangles CYU

CONCEPTS	BASIC	INTERMEDIATE	ADVANCED
Solving 45-45-90 Right Triangles	1	8, 9	2, 11
Solving 30-60-90 Right Triangles	3	4, 5, 7	6, 10, 11
Drawing diagrams from words			7, 8
Area of squares and parallelograms	9	10	10
Real World Problem Solving			11, 12, 13

Find the value of x. Write your answer in simplest form. Show the set up to earn full credit.
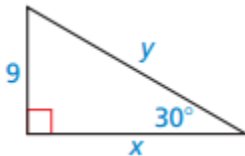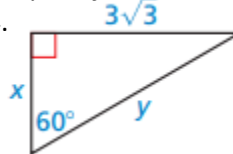
1.
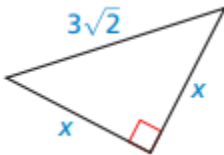
2.
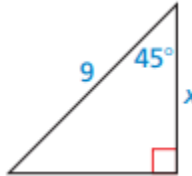
Find the values of x and y. Write your answers in simplest form. Show the set up to earn full credit.
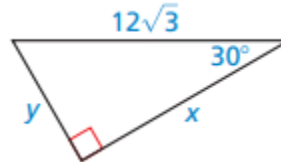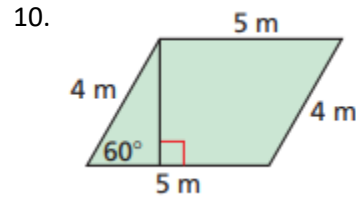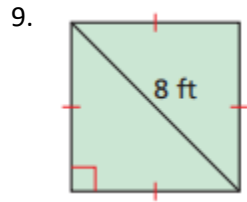
3.

4.

5.

6.

Sketch the figure that is described. Find the indicated length. Round decimal answers to the nearest tenth.

7. The side length of an equilateral triangle is 5 cm. Find the length of an altitude.

8. The perimeter of a square is 36 inches. Find the length of a diagonal.

*Find the area of the figure. Round decimal answers to the nearest tenth.*

9.

8 ft

10.

5 m

4 m

4 m

60°

5 m

11. **PROBLEM SOLVING** Each half of the drawbridge is about 284 feet long. How high does the drawbridge rise when x is 30°? 45°? 60°?

284 ft

x
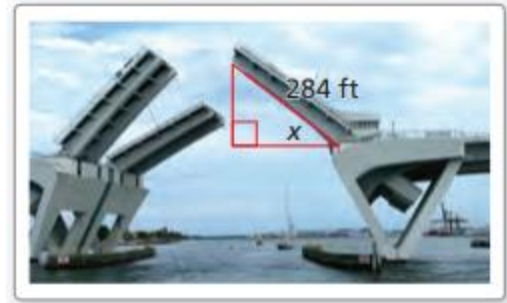
12. **HOW DO YOU SEE IT?** The diagram provided shows part of the Wheel of Theodorus.
a) Which triangles, if any, are 45°- 45° - 90° triangles?

b) Which triangles, if any, are 30°- 60° - 90° triangles?

1

1

1

1

1

$\sqrt{3}$ $\sqrt{4}$

$\sqrt{2}$

$\sqrt{5}$

1

$\sqrt{6}$

1

1

$\sqrt{7}$
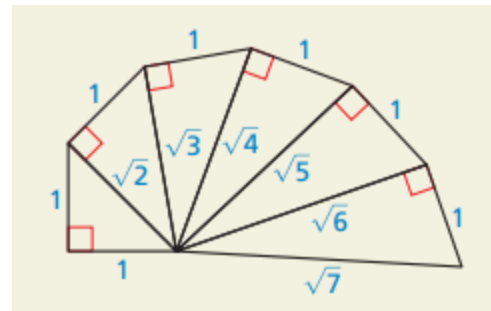
13. **THOUGHT PROVOKING** The diagram below is called the *Ailles rectangle*. Each triangle in the diagram has rational angle measures and each side length contains at most one square root. Label the sides and angles in the diagram. Describe the triangles.

2

2

60°
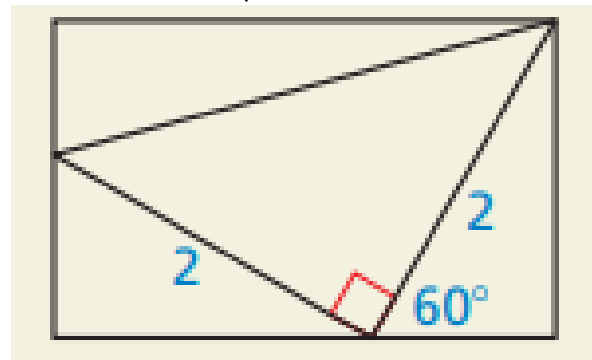
CYU Reflection: *How far can you go: basic, intermediate, or advanced?*
Rate your mastery level!
How confident are you with the skills this CYU covered? Circle the score you would give yourself.

| 1   2 | 3   4   5 | 6   7 | 8 |
| Basic | Intermediate | Advanced | Solved ALL! |